



**U.S. Army Engineering R&D Center
Waterways Experiment Station
Geotechnical Laboratory
Geotechnical Engineering and
Geosciences Division
3909 Halls Ferry Road
Vicksburg, Mississippi 39180-6199**

Have Interest in?

Engineering Geophysics Capabilities

- T Subsurface cavity and tunnel detection
 - Detection and delineation of subsurface cavities
 - Karst site characterization
- T Waterborne geophysics
 - Pre- and post-dredging conditions
 - Subbottom material identification, distribution, and volume
 - Acoustic impedance
 - Side scan sonar mosaics
- T Geophysical methods used:
 - Seismic refraction/ reflection
 - Electrical resistivity
 - Magnetic surveying
 - Self potential
 - Downhole geophysical logging
 - Electromagnetic induction
 - Microgravity
 - Ground penetrating radar
 - Vibratory experiments
 - Blast monitoring
 - Seismic crosshole/downhole (P- and S-wave)
 - Subbottom seismic profiling (waterborne)



Patoka Dam, IN, cavities

Geotechnical Investigations

- T Site geology and engineering significance
- T Determination of geotechnical properties
- T Groundwater detection
- T Safety analysis of dams and levees
- T Locate underground storage tanks and utilities



Jefferson Proving Ground, IN, electromagnetic survey

Geoarchaeological Investigations

- T Non-invasive methods
- T Cultural resource management
- T Geologic site characterization
- T Artifact detection and location
- T Spatial pattern recognition
- T Landscape analysis and interpretation



*Screening sediment at
Columbia Park, WA
(Kennewick Man) study area*

Earthquake Engineering

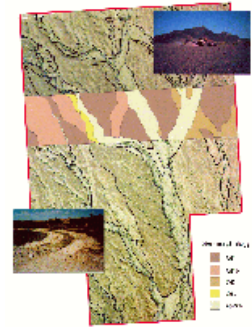
- T EQEN Research Program
- T Strong-Motion Instrumentation Program
- T Seismic remediation at Corps dams

Hazardous and Toxic Waste Site Assessment, Engineering Geology, and Hydrogeology Studies

- T Locate and delineate landfills and buried waste containers
- T Groundwater modeling
- T Geomorphic mapping
- T Investigate contaminant plumes in groundwater
- T General site geology and hydrogeology
- T Monitor contaminant appearance at engineered barriers



*Kissimmee River, FL,
restoration study*



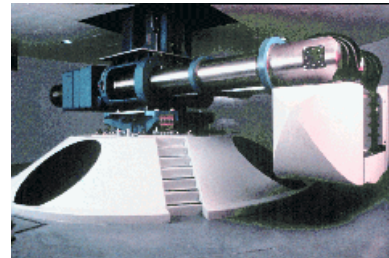
*Geomorphic mapping
of Combat Systems
Maneuver Area,
Yuma Proving
Ground, AZ*

Unexploded Ordnance (UXO)

- T Multisensor integration research for detection and discrimination
- T Site characterization
- T Phenomenological modeling
- T Emerging technology research and development

Army Centrifuge

- T To accurately simulate real world problems using scale models
 - Cold regions
 - Earthquakes
 - Locks, dams, structures
 - Environmental (e.g. contaminant migration)
 - Geotechnical engineering
 - Coastal and hydraulics
 - Blast effects



US Army Centrifuge

small-

Visit our web site at <http://geoscience.wes.army.mil> for the latest fact sheets and project summaries on these and many other research capabilities.

For additional information on Earthquake Engineering and Geosciences Division research, contact Dr. Mary E. Hynes (CEERD-GG), 601-634-2280, email: hynesm@wes.army.mil.

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